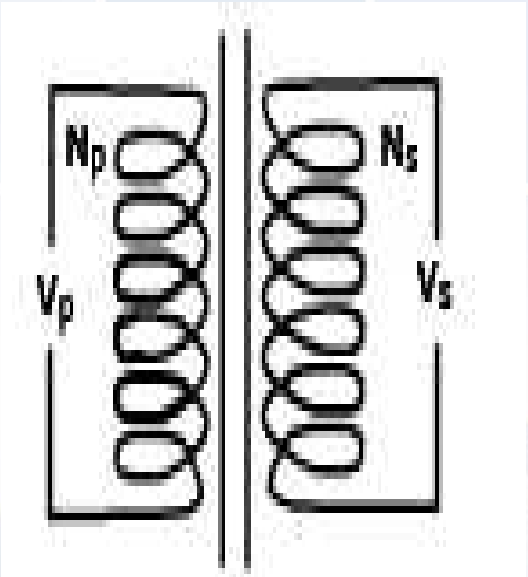
PENYEARAH DAN REGULASI

Transformator ideal



$$Pp = Ps$$

$$Vp \times Ip = Vs \times Is$$

$$\frac{Vp}{Vs} = \frac{Is}{Ip}$$

$$\frac{Is}{Ip} = \frac{Np}{Ns}$$

Pp = daya primer (watt)

Ps = daya sekunder (watt)

Vp = tegangan primer (Volt)

Vs = tegangan sekunder (Volt)

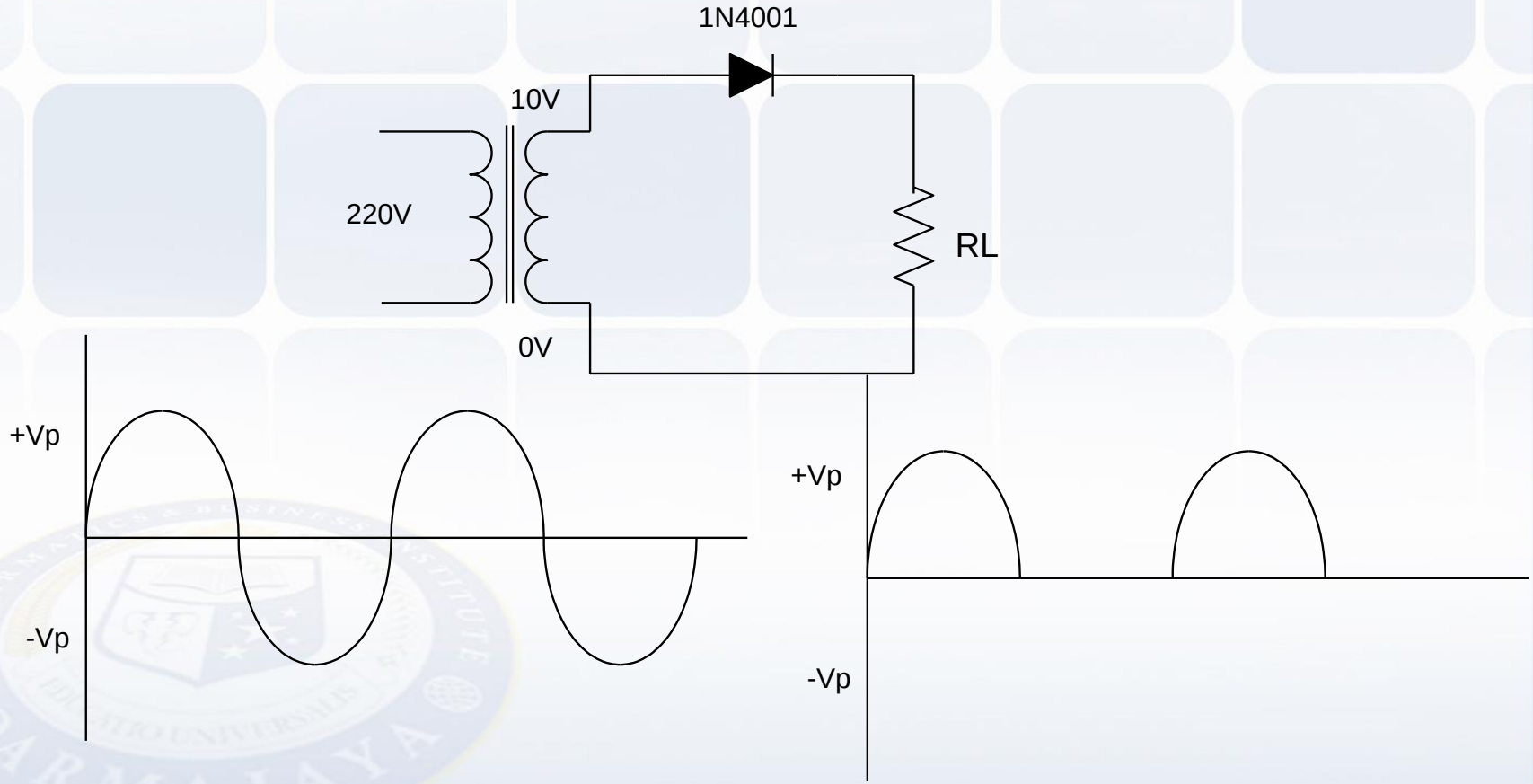
Ip = kuat arus sekunder (ampere)

Is = kuat arus primer (ampere)

Np = jumlah lili tan primer

Ns = jumlah lili tan sekunder

Penyearah Setengah Gelombang



Pendekatan pertama :

$V_P = V_{rms} / 0{,}707 = 10 / 0{,}707 = 14{,}1\ V$

$V_P\ (out) = V_P\ (in) = 14\ V$

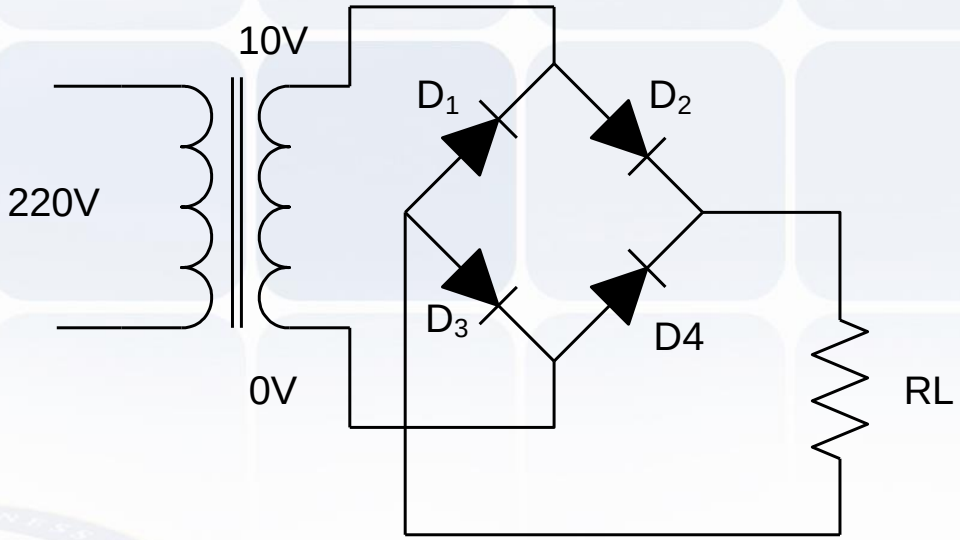
$V_{dc} = V_P / \pi = 14{,}1 / \pi = 4{,}49\ V$

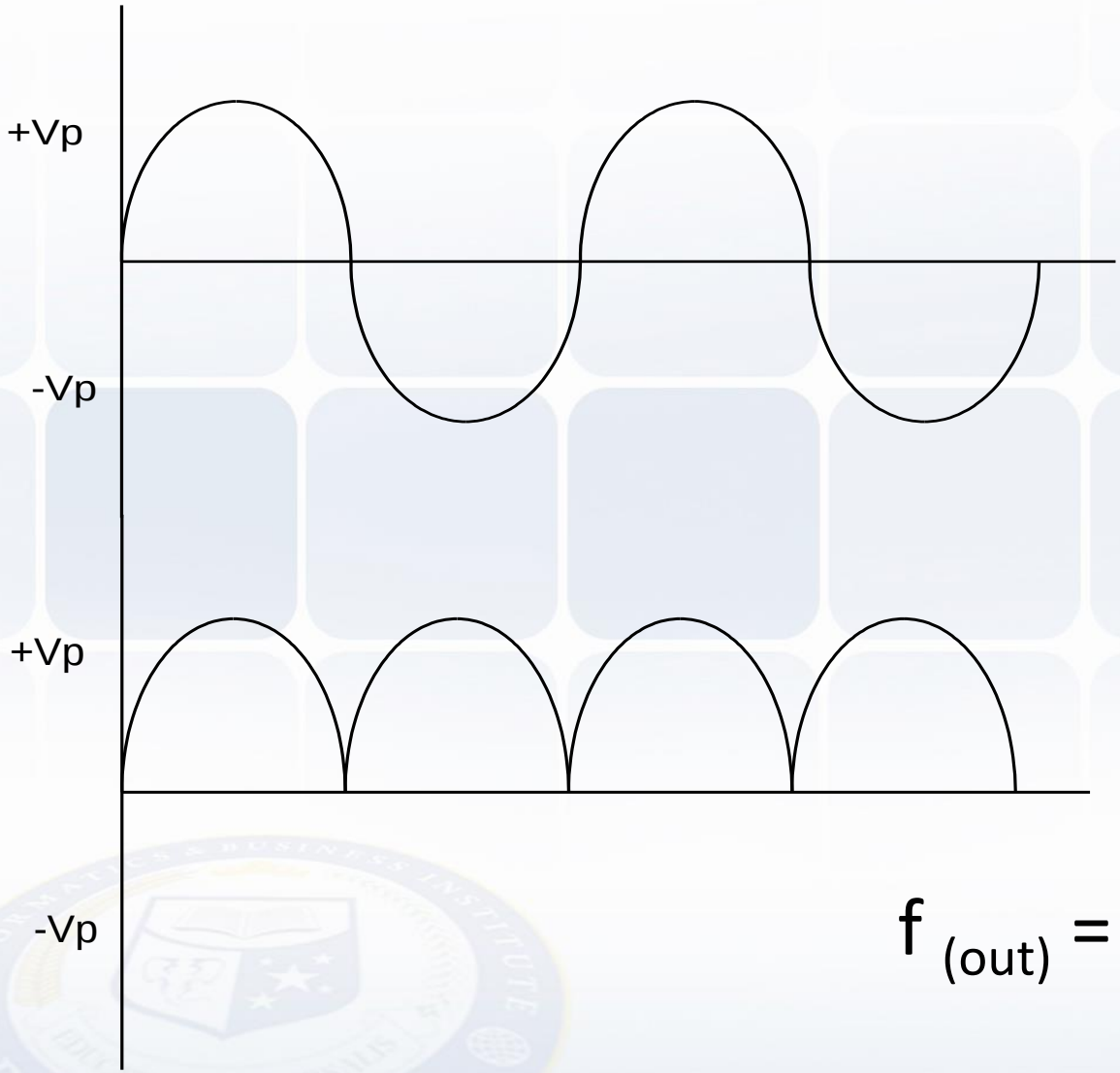
Pendekatan kedua :

$V_P\ (out) = VP\ (in) - 0{,}7 = 13{,}4\ V$

$V_{dc} = Vp / \pi = 13{,}4 / \pi = 4{,}27$

Penyearah Gelombang Penuh Bridge

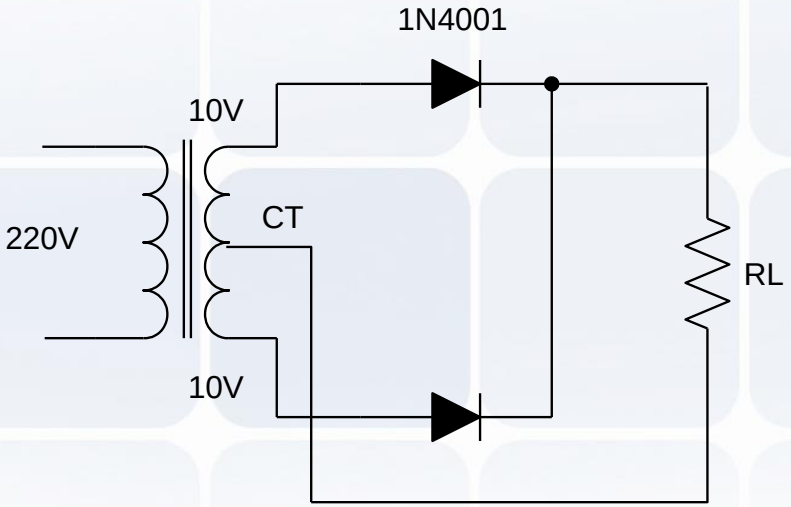


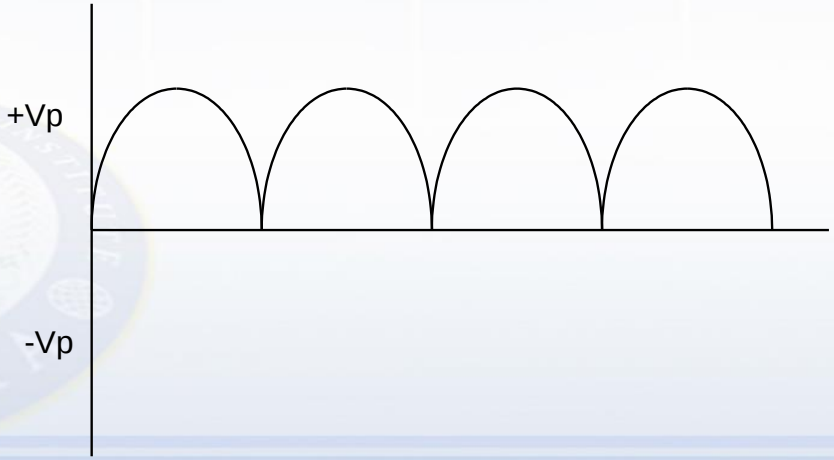


$$f_{(out)} = 2\ f_{(in)}$$

$$V_{P\ (out)} = V_{P\ (in)} - 1{,}4\ V$$

Penyearah Gelombang Penuh CT






12V CT 12V
2A
18V 15V 15V 18V
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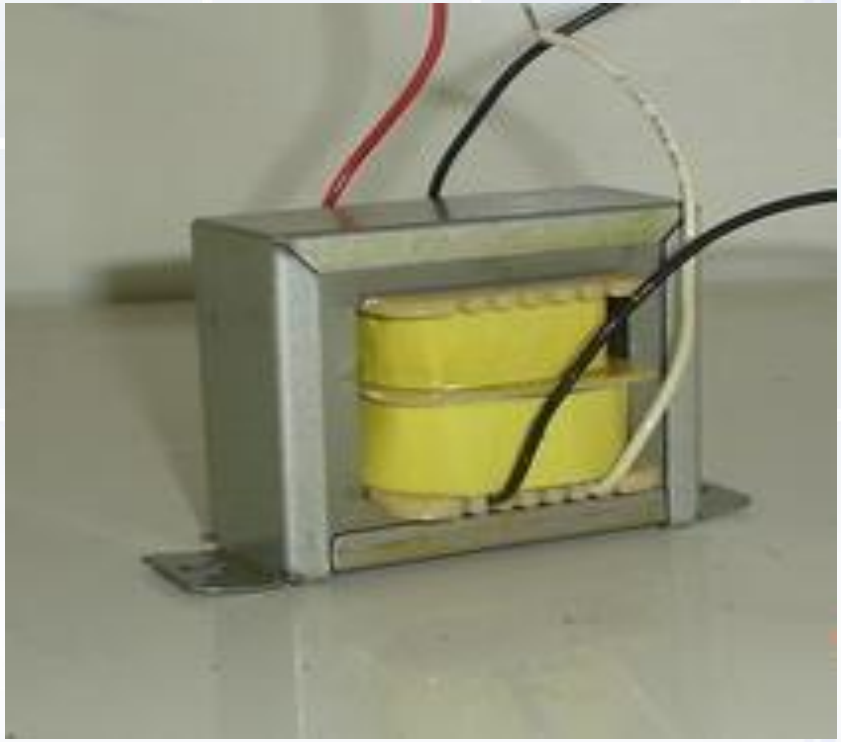

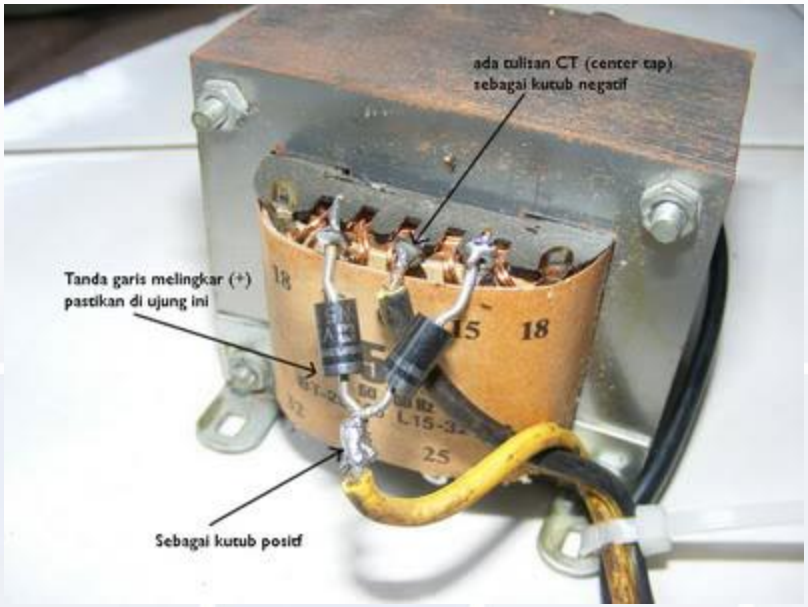

Bentuk tegangan kerut-kerut (ripple).
Mencatu motor listrik DC.
Mencatu peralatan pemanas
Mencatu lampu.
Filter

end